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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,890	02/27/2002	David M. Lucas	P1695USA	4131

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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 12/19/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,890

Applicant(s)

LUCAS ET AL. **TG**

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: please disclose the patent numbers of the three patents referred to in the Background section of the specification (page 2).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not adequately describe the chemical makeup of the curing compounds that are represented by the terms "diisopropyl xanthogen" and "xanthogen sulfide" (see page 4 of the specification). Are these terms intended to recite a specific chemical structure, or are these intended to be general terms? Note that Table 1 does not provide information for "diisopropyl xanthogen" and "xanthogen sulfide", while it does provide information for the other xanthogen compounds claimed in claim 1, indicating that the terms are general and do not describe a particular compound. What chemical structure (general or specific) is intended to be recited by the terms "diisopropyl xanthogen" and "xanthogen sulfide"?

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In further regard to claim 1, the chemical structure of the species having a compound "plus" another compound is not clear- are these compounds combined to form a single compound prior to mixing the components of the invention, or are the two components mixed along with the rest of the components of the invention, as suggested in Table 1 given on page 4 of the specification? Examiner suggests replacing the word "plus" with more descriptive language.

4. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon the fact that the specification discloses that the use of zinc dibenzyl dithiocarbamate accelerator systems result in a latex with a significantly shortened acceptable dipping life (page 3, lines 16-19) yet this compound is claimed as the second compound of claim 1.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 6, 8-10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, the term "second compound" is indefinite. The use of "second" requires that the term "first compound" appear in the claim.

In further regard to claim 1, the term "plus", which appears twice in the fifth line of the claim and once each in the sixth and seventh lines of the claim, is indefinite. A compound "plus" another compound is not a compound. The chemical structure of the species having a compound

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“plus” another compound is not clear- are these compounds combined to form a single compound prior to mixing the components of the invention, or are the two components mixed along with the rest of the components of the invention, as suggested in Table 1 given on page 4 of the specification?

In further regard to claim 1, the terms “diisopropyl xanthogen” and “xanthogen sulfide” are broad and indefinite. The scope of the chemical compositions intended to be recited by these general terms cannot be ascertained.

In further regard to claim 1, the claim should positively set forth the purpose of the “polyisoprene article” and the structure necessary for carrying out the purpose, i.e., the claim is incomplete in regard to the structure of the “polyisoprene article”. No structure is claimed for the “polyisoprene article”; therefore, the scope of the claim cannot be ascertained.

In regard to claim 6, claim 1, upon which claim 6 depends, requires that the “second compound” be selected from the list of compounds given in claim 1. Zinc dibenzylidithiocarbamate is provided in the list, but only in combination with a xanthogen compound. Zinc dibenzylidithiocarbamate is not listed independently. Therefore, as required by claim 1, the second compound cannot consist solely of zinc dibenzylidithiocarbamate as claimed in claim 6. The limitation “zinc dibenzylidithiocarbamate” therefore lacks the antecedent basis as required by the phraseology of claim 1 that reads “a second compound selected from a group consisting of....”.

In regard to claim 8, the use of “range” in the claim is indefinite. A single value is claimed.

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Claims 9 and 10 recite the limitation "second compound containing xanthogen" in the first line of both claims. There is insufficient antecedent basis for this limitation in the claim. The term "second compound" is not followed by "containing xanthogen". Examiner recommends inserting "containing xanthogen". Note, in addition, the 35 U.S.C. 112 first and second paragraph rejections of claim 1 in regard to the use of the terms "plus" and "compound".

The term "continuous" in claim 12 is a relative term which renders the claim indefinite. The term "continuous" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "defect-free" in claim 12 is a relative term which renders the claim indefinite. The term "defect-free" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In further regard to claim 12, the structure intended to be recited by the phrase "continuous, defect-free film" is unclear. Furthermore, the recitation of "film" renders the claim indefinite because the structure implied by the term "condom" is not correspondent with the structure implied by the term "film".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. Claims 1-5 and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Stevenson et al. (US 5,254,635).

In regard to claim 1, Stevenson et al. teach an article composed of polyisoprene latex (col. 5, lines 6-12), sulfur (col. 4, lines 35-37), a thiuram compound and dihydrocarbyl xanthogen polysulfides as rubber-curing agents (col. 4, lines 3-7). Stevenson et al. teach that the general formula of the xanthogen polysulfide is $R^1O-CS-S_x-CS-OR^2$ where x "is at least 2, and often greater than 2, e.g. 4 or 5 (col. 4, lines 7-13). Stevenson et al. further teach that R^1 and R^2 are preferably each C_{1-6} alkyl and are usually the same (col. 4, lines 13-16), and since Stevenson et al. provide isopropyl as an example R group, Stevenson et al. teach the use of diisopropyl xanthogen polysulfide as the "second compound" as claimed.

In regard to the terms, "diisopropyl xanthogen" and "xanthogen sulfide" recited in claim 1, the diisopropyl xanthogen polysulfide of Stevenson et al. is a "diisopropyl xanthogen", and the genus of dihydrocarbyl xanthogen polysulfides of Stevenson et al. are "xanthogen sulfides".

In regard to claims 2, 4 and 5, Stevenson et al. teach that the thiuram compound is tetrabenzyl thiuram disulfide (col. 4, lines 65-68, col. 2, lines 15-22 and col. 5, lines 30-68, col. 8, lines 27-29). The tetrabenzyl thiuram disulfide is present in an amount of 0.1 to 1 parts per part of the dihydrocarbyl xanthogen polysulfide (col. 4, lines 65-68), which in turn is present in an amount of about 1-6 parts by weight per 100 parts of the rubber (i.e. polyisoprene) (col. 7, line 50-col. 8, line 1). Therefore, the range claimed in claim 4 of 0.45-0.75 parts per 100 parts polyisoprene falls within the range taught by Stevenson et al., as does the value claimed in claim 5 of 0.6 parts per 100 parts polyisoprene.

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In regard to claim 3, Stevenson et al. teach that dry natural rubber or synthetic polyisoprene is a preferred material. Natural rubber is cis-1,4-polyisoprene, and synthetic polyisoprene is available as cis-1,4-polyisoprene, as evidenced by the enclosed excerpt of *Hawley's Condensed Chemical Dictionary*.

In regard to claims 9 and 10, Stevenson et al. teach that the second compound that contains xanthogen is present in an amount of about 1-6 parts by weight per 100 parts of polyisoprene (col. 7, line 50-col. 8, line 1).

In regard to claim 11, Stevenson et al. teach that the article is intended for skin contact and teaches that the material is shaped into contraceptives. A condom is a contraceptive.

In regard to claim 12, the articles are necessarily continuous and defect-free, since the articles that the material is used to form (a mouthpiece for use in anaesthesia, a mouthpiece for oxygen supply in an underwater environment, a baby teat, skin-diving suits, gloves, surgical gloves, surgical rubbers, contraceptives and balloons) are used for a purpose that requires that the article be continuous and defect-free.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. ('635) in view of Stevenson (US 4,695,609).

Stevenson et al. ('635) teach the polyisoprene article as discussed above.

In regard to claim 6, Stevenson et al. ('635) fail to teach that the second compound is zinc dibenzylthiocarbamate. Stevenson, however, disclose that dithiocarbamates are widely used as accelerators and curing agents for rubber goods (col. 1, lines 11-25). Stevenson provides zinc dibenzylthiocarbamate as an example dithiocarbamate additive to latex formulations (col. 1, lines 15-19 and col. 8, lines 50-68). Therefore, one of ordinary skill in the art would have recognized to have used zinc dibenzylthiocarbamate as the accelerator or curing agent of the polyisoprene article of Stevenson et al. ('635) since zinc dibenzylthiocarbamate is a notoriously well known accelerator and curing agent for rubber goods as taught by Stevenson. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used zinc dibenzylthiocarbamate as the accelerator or curing agent of the polyisoprene article of Stevenson et al. ('635) since zinc dibenzylthiocarbamate is a notoriously well known accelerator and curing agent for rubber goods as taught by Stevenson.

In regard to claims 7 and 8, Stevenson ('609) disclose that 0.2 parts zinc dibenzylthiocarbamate are added to 100 parts latex (col. 8, line 68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have adjusted the amount of zinc dibenzylthiocarbamate added to the polyisoprene to 0.3-0.5 parts (including 0.4

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parts) per 100 parts of polyisoprene in order to achieve the optimal amount of zinc dibenzylthiocarbamate to use with respect to acceleration or curing results depending on the end user result through routine experimentation, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

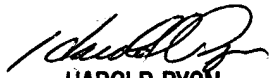
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,339,372 to Branlard et al., US 4,101,481 to Branlard et al., US 3,897,405 to Son et al., US 5,677,382 to Tsuji et al. and US 6,221,447 to Munn et al.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba WBA
12/13/02


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

12/14/02